

**REMARKS**

Claims 37-39 are amended. Claims 55-56 are added. Claims 37-56 are pending in the application.

Claims 37 and 39-47 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Torizuka, U.S. Patent No. 6,221,178. The Examiner is reminded by direction to MPEP § 2131 that anticipation requires each and every element of a claim to be disclosed in a single prior art reference. Claims 37 and 39-47 are allowable over Torizuka for at least the reason that Torizuka fails to disclose or suggest each and every limitation in any of those claims.

As amended independent claims 37 and 39 each recite a non-iron based alloy. The amendments to claims 37 and 39 are supported by the specification at, for example, page 2, lines 6-7; page 8, lines 29-33; the specific examples and the claims as originally filed. Torizuka discloses methods for producing ultra fine grain steel (abstract; col. 1, ll. 5-10 and col. 2, ll. 37-47). Torizuka does not disclose or suggest the claims 37 and 39 recited non-iron based alloy. Accordingly, independent claims 37 and 39 are not anticipated by Torizuka and are allowable over this reference.

Dependent claims 40-47 are allowable over Torizuka for at least the reason that they depend from corresponding allowable base claims 37 and 39.

Claims 38, 48, 49, 51, 53 and 54 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Goto, U.S. Patent No. 4,517,032. As amended independent claim 38 recites a non-iron based alloy produced from a cast material. Goto discloses methods of producing grain-oriented silicon steel sheets (abstract and col. 4, ll. 26-31). Goto does not

disclose the claim 38 recited non-iron based alloy produced from a cast material.

Accordingly, claim 38 is not anticipated by Goto and is allowable over this reference.

Dependent claims 48, 49, 51, 53 and 54 are allowable over Goto for at least the reason that they depend from allowable base claim 38.

Claims 38, 51, 52, 53 and 54 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Lally, U.S. Patent No. 5,772,795. Lally discloses methods of producing high strength steel sheets (abstract and col. 4, ll. 32-53). Lally does not disclose the claim 38 recited non-iron based alloy produced from a cast material. Accordingly, claim 38 is not anticipated by Lally and is allowable over this reference.

Claims 51, 52, 53 and 54 are allowable over Lally for at least the reason that they depend from allowable base claim 38.

Claims 38, 48 and 51-54 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Dunlop, U.S. Patent No. 5,780,755. As amended independent claim 38 recites a non-iron based alloy produced from a cast material, at least one type of texture being present in that alloy that was not present in the cast material, the at least one type of texture being selected from the group consisting of {111}, {140}, {120}, {130}, {123}, {133}, {252}, {216}, {223}, {205} and {146}. The amendment to claim 38 is supported by the specification at, for example, page 25, lines 6-25, and Table 2. Dunlop discloses sputtering targets and methods of making sputtering targets utilizing liquid dynamic compaction, alone or in combination with equal channel angular extrusion (col. 4, ll. 24-51).

Dunlop does not disclose or suggest the claim 38 recited alloy produced from a cast material, the alloy having at least one type of texture present that was not present in the

cast material as originally cast. Accordingly, independent claim 38 is not anticipated by Dunlop and is allowable over this reference.

Dependent claims 48 and 51-54 are allowable over Dunlop for at least the reason that they depend from allowable base claim 38.

Claim 50 stands rejected under 35 U.S.C § 103(a) as being unpatentable over Goto. As discussed above, independent claim 38 is not anticipated by Goto. Further, Goto does not suggest the claim 38 recited non-iron based alloy produced from a cast material. Accordingly, independent claim 38 is not rendered obvious by Goto and is allowable over this reference. Dependent claim 50 is allowable over Goto for at least the reason that it depends from allowable base claim 38.

Claims 55-56 do not add "new matter" to the specification since each is fully supported by the specification as originally filed. Claim 55 is supported by the specification at, for example, page 20, lines 17-22; and the claims as originally filed. Claim 56 is supported by the specification at, for example, Tables 1 and 2; page 10, lines 10-19, Fig. 5; page 20, lines 17-29; page 21, lines 9-21; and the claims as originally filed.

For the reasons discussed above claims 37-54 are allowable and claims 55-56 are believed allowable. Accordingly, applicant respectfully requests formal allowance pending claims 37-56 in the Examiner's next action.

Respectfully submitted,

Dated: March 6, 2003

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Application Serial No. ....09/912,616  
Filing Date .....July 24, 2001  
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Group Art Unit.....1742  
Examiner .....Wilkins III, Harry D.  
Attorney's Docket No. .....30-5004-DIV3  
Title: Alloys Formed From Cast Materials Utilizing Equal Channel Angular Extrusion

VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING  
RESPONSE TO DECEMBER 9, 2002 FINAL OFFICE ACTION

In the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

37. (Amended) An alloy comprising a randomized microstructure and a texture with a substantially uniform grain size; said alloy being a non-iron based alloy produced from a cast material by a method comprising the steps of:

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected at least one route, the alloy comprising a substantial absence of precipitates.

38. (Amended) An alloy comprising a strong texture; said alloy being a non-iron based alloy produced from a cast material by a method comprising the steps of:

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected at least one route, the alloy comprising uniformly distributed second-phase precipitates, the alloy having at least one type of texture present that was not present in the cast material as originally cast, the at least one type of texture being selected from the group consisting of {111}, {140}, {120}, {130}, {123}, {133}, {252}, {216}, {223}, {205} and {146}.

39. (Amended) An alloy comprising substantially random textures; said alloy being a non-iron based alloy produced by a method comprising the steps of:

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected at least one route; the alloy comprising a fine grain size of less than about 1 micron.

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